# **Appendix E. Example Output from T-REX and T-HERPS**

T-REX (turf use)

# TREX MODEL INPUTS

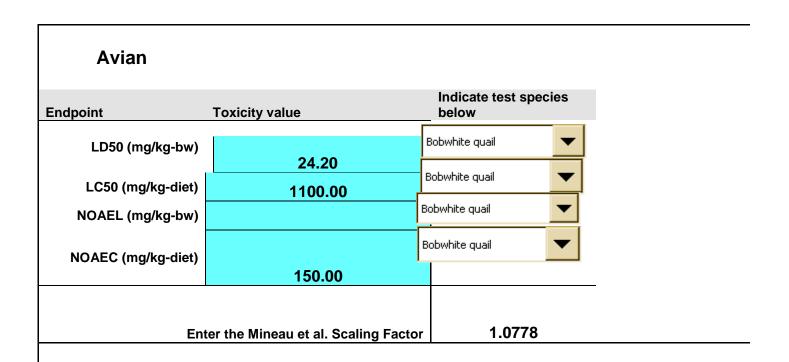
These values will be used in the calculation of exposure estimates for foliar, granular, liquid and/or

seed applications of pesticides.

Chemical Identity and Application	Information						
Chemical Name:	Methomyl						
Seed Treatment?		FALSE					
Use:	Grasses						
Product name and form:							
% A.I. (leading zero must be entered for formulations <1% a.i.):	100.00%						
Application Rate (lb ai/acre)	0.9						
Half-life (days):	2.5						
Application Interval (days):	5						
Number of Applications:	4						
Are you assessing applications with variable rates or intervals?	no						

# Assessed Species Inputs (optional, use defaults for RQs for national level assessments)

What body weight range is assessed (grams)?	Birds	Mammals
Small	20	15
Medium	100	35
Large	1000	1000



# Mammalian

		Acute Study	Chronic Study
Size (g) of mammal use Default rat body weigh		350	350
Endpoint	Toxicity value		Reference (MRID)
LD50 (mg/kg-bw)	30.00		
LC50 (mg/kg-diet)			
Reported Chronic Endpoint	75.00	mg/kg-diet	
Is estimated daily dose (mg/kg-bw) reported from the available chronic mammal study? (yes or no)	no		

Estimated Chronic Daily Dose Equivalent to reported Chronic Dietary Endpoint

3.75

mg/kg-bw based on standard FDA lab rat conversion

# **Summary of Risk Quotient Calculations Based on Upper Bound Kenaga EECs**

	Table X. Upper Bound Kenaga, Acute Avian Dose-Based Risk Quotients												
							EECs and	RQs					
Size Class (grams)	Adjusted LD50	Short (	Short Grass Tall Grass		Frass	Broadleaf Plants		Fruits/Pods/Seeds		Arthropods		Granivore	
(8 ** **)		EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
20	20.42	326.72	16.00	149.75	7.34	183.78	9.00	20.42	1.00	127.97	6.27	4.54	0.22
100	23.14	186.31	8.05	85.39	3.69	104.80	4.53	11.64	0.50	72.97	3.15	2.59	0.11
1000	27.68	83.41										0.04	

	Table X. Upper Bound Kenaga, Subacute Avian Dietary Based Risk Quotients											
	EECs and RQs											
	Short Grass Tall Grass			Grass	Broadle	eaf Plants	Fruits/Pods/So	eeds	Arthropods			
LC50	EEC	RQ	EEC	RQ	EEC	EEC RQ EEC RQ				RQ		
1100	286.88	0.26	131.48	0.12	161.37	0.15	17.93	0.02	112.36	0.10		

	Table X. Upper Bound Kenaga, Chronic Avian Dietary Based Risk Quotients											
					E	ECs and F	RQs					
	Short Grass Tall Grass Broadleaf Plants Fruits/Pods/Seeds Arthropods								ods			
NOAEC (ppm)	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ		
150	286.88	1.91	131.48	0.88	161.37	1.08	17.93	0.12	112.36	0.75		

Size class not used for dietary risk quotients

	Table X. Upper Bound Kenaga, Acute Mammalian Dose-Based Risk Quotients												
			EECs and RQs										
Size Class (grams)	Adjusted LD50	Short Grass Tall Grass				Broa	adleaf Plants	Fruits/Pods/Seeds A			pods	Granivore	
		EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
15	65.93	273.51	4.15	125.36	1.90	153.85	2.33	17.09	0.26	107.126	1.6247	3.7988	0.0576
35	53.35	189.03	3.54	86.64	1.62	106.33	1.99	11.81	0.22	74.0384	1.3878	2.6255	0.0492
1000	23.07	43.83	1.90	20.09	0.87	24.65	1.07	2.74	0.12	17.1661	0.7439	0.6087	0.0264

	7	Гable X. U	pper Bou	ınd Kenag	a, Acute l	Mammalia	n Dietary Based R	isk Quoti	ients			
	EECs and RQs											
LC50	Short Grass Tall Grass				Broadle	eaf Plants	ants Fruits/Pods/Seeds Arthro			ods		
(ppm)	EEC	EEC RQ EEC RQ EEC RQ				RQ	EEC	RQ				
0	286.88	#DIV/0!	131.48	#DIV/0!	161.37	#DIV/0!	17.93	#####	112.36	#DIV/0!		

	Table X. Upper Bound Kenaga, Chronic Mammalian Dietary Based Risk Quotients											
	EECs and RQs											
NOAEC (ppm)	Short (	Grass	Tall Grass Broadleaf Plants Fruits/Pods/Seeds/Large Insects Arthro						Arthrop	ods		
	EEC	RQ	EEC	EC RQ EEC RQ			EEC	RQ	EEC	RQ		
75	286.88	3.83	131.48	1.75	161.37	2.15	17.93	0.24	112.36	1.50		

	Table X. Upper Bound Kenaga, Chronic Mammalian Dose-Based Risk Quotients												
Size Class (grams)	Adjusted NOAEL	Short (	Grass	Tall Grass Broadleaf Plants Fruits/Pods/Seeds Arthropods Grani					ivore				
		EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
15	8.24	273.51	33.19	125.36	15.21	153.85	18.67	17.09	2.07	107.13	13.00	3.80	0.46
35	6.67	189.03	28.35	86.64	12.99	106.33	15.95	11.81	1.77	74.04	11.10	2.63	0.39
1000	2.88	43.83	15.20	20.09	6.96	24.65	8.55	2.74	0.95	17.17	5.95	0.61	0.21

## T-REX (granular use)

## TREX MODEL INPUTS

These values will be used in the calculation of exposure estimates for foliar, granular, liquid and/or

seed applications of pesticides.

## **Chemical Identity and Application Information**

Chemical Name:	Methomyl					
		FALSE				
Seed Treatment?		TALOL				
Use:	Granular - 5G Granular					
Product name and form:						
% A.I. (leading zero must be entered for formulations <1% a.i.):						
Application Rate (lb ai/acre)	0.15					
Half-life (days):						
Application Interval (days):						
Number of Applications:	1					
Are you assessing applications with variable rates or intervals?	no					

# Assessed Species Inputs (optional, use defaults for RQs for national level assessments)

What body weight range is assessed (grams)?	Birds	Mammals
Small	20	15
Medium	100	35
Large	1000	1000

#### 

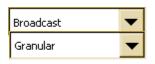
0.00%

% incorporated

Row/Band/In	-furrow applications	}			
Granular			N/A		
Intermediate Ca	alculations		Intermediate	Calculations	
	# rows acre-1:	83.48	mç	g a.i./1000 ft row:	: <b>N</b> /
	row length (ft):	208.71		bandwidth:	: <b>N</b> /
	lb ai/1000 ft row:	0.01		mg a.i./ft2:	. N/
	bandwidth (ft):	0.67	exp	osed mg a.i./ft2:	N/
	mg ai/ft2:	5.86	-	=:	
	exposed mg ai/ft2:	5.86			
LD50 ft-2			N/A		
				wgt class	
	wgt class (grams)			(grams)	
Avian	20	14.35	Avian	20	N/A
	100	2.53		100	N/A
	1000	0.21		1000	N/A
Mammal	15	5.92	Mammal	15	N/A
	35	3.14		35	N/A
	1000	0.25		1000	N/A

# LD50 ft-2

**Application Type:** 



Do not use this input

Do not use this input

Do not use this input
Do not use this input
Do not use this input
% incorporated

Make sure to enter an application rate above

0.00%

Broadcast Granular	t applications	
Intermediate	e Calculations	
mg ai/ft2:	1.56	
LD50 ft- 2		
	wgt class (grams)	
Avian	20	3.83
	100	0.68
	1000	0.06
Mammal	15	1.58
	35	0.84
	1000	0.07

## T-REX (Scatter bait use)

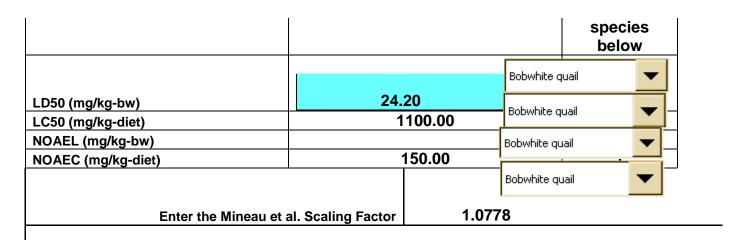
# TREX MODEL INPUTS

These values will be used in the calculation of exposure estimates for foliar, granular, liquid and/or seed applications of pesticides.

Chemical Name:	Methomyl				
		FALSE			
Seed Treatment?		TALSE			
Use:	Scatter bait - StimuKil (1% a.i.)				
Product name and form:					
% A.I. (leading zero must be entered for formulations <1% a.i.):					
Application Rate (lb ai/acre)	0.2178				
Half-life (days):					
Application Interval (days):					
Number of Applications:	1				
Are you assessing applications with variable rates or intervals?	no				

# Assessed Species Inputs (optional, use defaults for RQs for national level assessments)

What body weight range is assessed (grams)?	Birds	Mammals
Small	20	15
Medium	100	35
Large	1000	1000
Avian		
Endpoint	Toxicity value	Indicate test



## Mammalian

		Acute Study	Chronic Study
Size (g) of mammal use Default rat body weigh		350	350
Endpoint	Toxicity value		Reference (MRID)
LD50 (mg/kg-bw)	14.00		
LC50 (mg/kg-diet)			
Reported Chronic Endpoint	75.00	mg/kg-diet	
Is estimated daily dose (mg/kg-bw) reported from the available chronic mammal study? (yes or no)	no		

mg/kg-bw based on standard FDA lab rat

conversion

Estimated Chronic Daily	
Dose Equivalent to	2 75
reported Chronic Dietary	3.75
Endpoint	

## LD50 ft-2

**Application Type:** 

Broadcast	▼
Granular	•

Make sure to enter an application rate above

Do not use this input

wincorporated

0.00%

Broadcast applications Granular							
Intermediate Calculations							
mg ai/ft2:	2.27						
LD50 ft-							
2							
	wgt class (grams)						
Avian	20	5.55					
	100	0.98					
	1000	0.08					
Mammal	15	4.91					
	35	2.60					
	1000	0.21					

## T-HERPS MODEL INPUTS

These values will be used in the calculation of exposure estimates for foliar applications of pesticides.

Chemical Name:	Me	ethomyl
Use:	G	rasses
Product name and form:		
% A.I. (leading zero must be entered for formulations <1% a.i.):	10	00.00%
Application Rate (lbs/A):	0.9	
Half-life (days): Application Interval (days): Number of Applications:	2.5 5 4	
What taxonomic group are you assessing?  Does the assessed animal eat mammals?	Amphibian Yes	
Does the assessed animal eat amphibians or reptiles?	Yes	

assessing the California Red Legge Garter Snake, the California Whip Sherptiles with dietary behaviors that species. For example, T-HERPS dherbivores. Future versions of T-H of an expanded set of herptiles.

T-HERPS (version 1.1) is currently

See comment in this cell for information on enabling macros

> Questions? Comments? Click here

Do you know the maximum size mammal that can be consumed by the assessed species? If so, choose "yes" in cell B16 and enter the corresponding sizes in the cells that appear. Note that data for 3 size classes can be entered. If you do not have data for specific size classes, then use professional judgement regarding whether the data allow for an estimate of the maximum size animal that can be consumed.

No

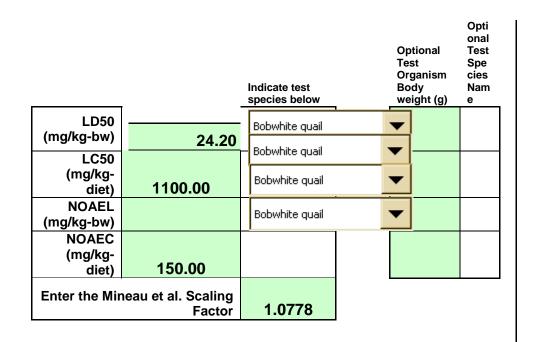
Do you know the maximum size amphibian or reptiles that can be consumed by the assessed species? If so, choose "yes" in cell B18 and enter the corresponding sizes in the cells that appear. Note that data for 3 size classes can be entered. If you do not have data for specific size classes, then use professional judgement regarding whether the data allow for an estimate of the maximum size animal that can be consumed.

No

Note: Sources of wildlife diet are assumed to be available for less than one year for this model.

### **Toxicity Data Inputs**

Avian/Terrestrial Phase Amphibian - Enter oral exposure terrestrial phase amphibian toxicity data if available. Otherwise, enter avian toxicity data as you would for T-REX version 1.3.1.



# **Assessed Species Inputs**

What is the body weight range of the assessed herptile (choose up to 3)?

Defaults are 2 grams, 20 grams, and 200 grams for amphibians and 2 grams, 20 grams, and 800 grams.

Small	2	grams
Medium	20	grams
Large	200	grams

What is the water content (percent as a whole number) of the assessed <b>small</b> herptile's diet	80%	Enter percent in whole numbers; in the absence of data indicating otherwise, assume 80% to be consistent with T-REX. Consult U.S. EPA (1993) for appropriate alternatives if specific diet is known.  If there is a difference in			
What is the water content (percent as a whole number) of the assessed <b>medium</b> herptile's diet	80%				
What is the water content (percent as a whole number) of the assessed large herptile's diet	80%	dietary content of different sizes of the assessed species enter different values for each size class and provide justification. For example, small individuals may consum mainly invertebrates, while larger adults may consume vertebrates.			
	Small Animal	Medium	Large		
What is the maximum size <b>mammal</b> that can be consumed by the assessed species? NOTE: check the literature for appropriate value to use for the assessed species and enter into Row 16 if available. Default is that amphibians can eat an animal that is 2/3 of its body weight (based on observations of the CRLF, Cook, 1997). Maximum size prey for reptiles is calculated using the following equation: BW of assessed species ^1.071 (King, 2002).	1.33	13.33	133.33		
What is the maximum size <b>amphibian/reptile</b> that can be consumed by the assessed species? NOTE: check the literature for appropriate value to use for the assessed species and enter into Row 16 if available. Default is that amphibians can eat an animal that is 2/3 of its body weight (based on observations of the CRLF, Cook, 1997). Maximum size prey for reptiles is calculated using the following equation: BW of assessed species ^1.071 (King, 2002).	1.33	13.33	133.33		

### **Summary of EECs and RQs Based on Upper Bound Kenaga EECs**

Table X. Upper Bound Kenaga, Acute Terrestrial Herpetofauna Dose-Based Risk Quotients

					EECs ar	d RQs				
Adjusted LD50	y Plants/		Fruits/Pods/ Seeds/ Large Insects		Herbivore Mammals		Insectivore Mammal		Amphibians	
	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
17.07	8.96	0.53	1.00	0.06	523.83	30.69	32.74	1.92	6.55	0.38
20.42	5.31	0.26	0.59	0.03	191.95	9.40	12.00	0.59	3.88	0.19
24.42	3.15	0.13	0.35	0.01	70.34	2.88	4.40	0.18	2.30	0.09
	17.07 20.42	Adjusted Plan Small 1 EEC 17.07 8.96 20.42 5.31	Adjusted LD50 Plants/ Small Insects  EEC RQ  17.07 8.96 0.53 20.42 5.31 0.26	Plants   See   Large     EEC   RQ   EEC	Plants   Seeds   Large Insects   EEC   RQ   EEC   RQ	Broadleaf   Fruits/Pods/   Seeds/   Large Insects   EEC   RQ   EEC   RQ   EEC	Adjusted   Plants   Seeds   Large Insects   Herbivore   Mammals	Broadleaf   Fruits/Pods/   Herbivore   Insect   Mammals   Man	Broadleaf   Plants   Seeds   Large Insects   Herbivore   Mammals   Insectivore   Mammals   Mammals	Broadleaf   Fruits/Pods/  Seeds/  Large Insects   Herbivore   Mammals   Insectivore   Mammal   Ample

Table X. Upper Bound Kenaga, Subacute Terrestrial Herpetofauna Dietary Based Risk Quotients

	EECs and RQs											
LC50 (ppm)	Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects		Herbivore Mammals		Insectivore Mammals		Amphibians			
	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ		
1100	161.37	0.15	17.93	0.02	287.93	0.26	18.00	0.02	5.83	0.01		

Size class not used for dietary risk quotients

Table X. Upper Bound Kenaga, Chronic Terrestrial Herpetofauna Dietary Based Risk Quotients

Table X. Upper Bound Kenaga, Chronic Terrestrial Herpetolauna Dietary Based Risk Quotients												
	EECs and RQs											
NOAEC (ppm)	Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects		Herbivore Mammals		Insectivore Mammals		Amphibians			
	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ		
150	161.37	1.08	17.93	0.12	287.93	1.92	18.00	0.12	5.83	0.04		

## T-HERPS MODEL INPUTS

These values will be used in the calculation of exposure estimates for foliar applications of pesticides.

Chemical Name:  Use: Grasses  Product name and form:  % A.I. (leading zero must be entered for formulations <1% a.i.): Application Rate (lbs/A):  O.9  Half-life (days): Application Interval (days): Number of Applications: 4  What taxonomic group are you assessing? Reptile  Does the assessed animal eat mammals?  Yes  Does the assessed animal eat amphibians or reptiles?  Yes				
Product name and form:  % A.I. (leading zero must be entered for formulations <1% a.i.):  Application Rate (lbs/A):  100.00%  Half-life (days):  Application Interval (days):  Number of Applications:  What taxonomic group are you assessing?  Does the assessed animal eat mammals?  Yes	Chemical Name:	Methomyl		
% A.I. (leading zero must be entered for formulations <1% a.i.):  Application Rate (lbs/A):  Half-life (days):  Application Interval (days):  Number of Applications:  What taxonomic group are you assessing?  Does the assessed animal eat mammals?  Yes	Use:	G	rasses	
Application Rate (lbs/A):  Half-life (days):  Application Interval (days):  Number of Applications:  What taxonomic group are you assessing?  Does the assessed animal eat mammals?  Yes	Product name and form:			
Half-life (days):  Application Interval (days):  Number of Applications:  What taxonomic group are you assessing?  Does the assessed animal eat mammals?  Yes		10	00.00%	
Application Interval (days): 5  Number of Applications: 4  What taxonomic group are you assessing? Reptile  Does the assessed animal eat mammals? Yes	Application Rate (lbs/A):	0.9		
Application Interval (days): 5  Number of Applications: 4  What taxonomic group are you assessing? Reptile  Does the assessed animal eat mammals? Yes				
Application Interval (days): 5  Number of Applications: 4  What taxonomic group are you assessing? Reptile  Does the assessed animal eat mammals? Yes	Half-life (days):	2.5		
What taxonomic group are you assessing?  Does the assessed animal eat mammals?  Yes		5		
What taxonomic group are you assessing?  Does the assessed animal eat mammals?  Yes		4		
		Reptile		
Does the assessed animal eat amphibians or reptiles?	Does the assessed animal eat mammals?	Yes		
Does the assessed animal eat amphibians or reptiles?				
· · · · · · · · · · · · · · · · · · ·	Does the assessed animal eat amphibians or reptiles?	Yes		

T-HERPS (version 1.1) is currently assessing the California Red Legge Garter Snake, the California Whip Sherptiles with dietary behaviors that species. For example, T-HERPS dherbivores. Future versions of T-H of an expanded set of herptiles.

See comment in this cell for information on enabling macros

> Questions? Comments? Click here

Do you know the maximum size mammal that can be consumed by the assessed species? If so, choose "yes" in cell B16 and enter the corresponding sizes in the cells that appear. Note that data for 3 size classes can be entered. If you do not have data for specific size classes, then use professional judgement regarding whether the data allow for an estimate of the maximum size animal that can be consumed.

Do you know the maximum size amphibian or reptiles that can be consumed by the assessed species? If so, choose "yes" in cell B18 and enter the corresponding sizes in the cells that appear. Note that data for 3 size classes can be entered. If you do not have data for specific size classes, then use professional judgement regarding whether the data allow for an estimate of the maximum size animal that can be consumed.

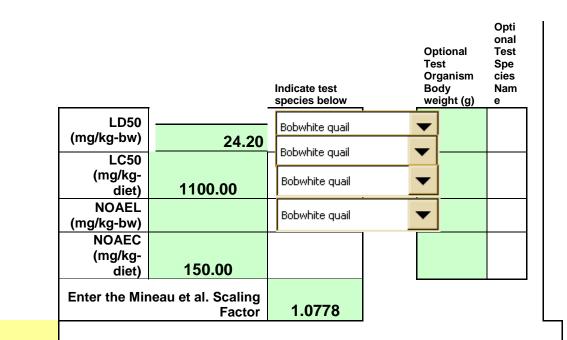
Note: Sources of wildlife diet are assumed to be available for less than one year for this model.

No

No

#### **Toxicity Data Inputs**

Avian/Terrestrial Phase Amphibian - Enter oral exposure terrestrial phase amphibian toxicity data if available. Otherwise, enter avian toxicity data as you would for T-REX version 1.3.1.



## **Assessed Species Inputs**

What is the body weight range of the assessed herptile (choose up to 3)?

Defaults are 2 grams, 20 grams, and 200 grams for amphibians and 2 grams, 20 grams, and 800 grams.

Small	2	grams
Medium	20	grams
	20	grams
Large	800	grams

What is the water content (percent as a whole number) of the assessed <b>small</b> herptile's diet  What is the water content (percent as a whole number) of the assessed <b>medium</b> herptile's diet	80%	data indicating otherwise, assume 80% to be consist with T-REX. Consult U.S (1993) for appropriate alternatives if specific die known.				
What is the water content (percent as a whole number) of the assessed large herptile's diet	80%	If there is a difference in dietary content of different sizes of the assessed species enter different values for each size class and provide justification. For example, small individuals may consum mainly invertebrates, while larger adults may consume vertebrates.				
	Small Animal	Medium	Large			
What is the maximum size <b>mammal</b> that can be consumed by the assessed species? NOTE: check the literature for appropriate value to use for the assessed species and enter into Row 16 if available. Default is that amphibians can eat an animal that is 2/3 of its body weight (based on observations of the CRLF, Cook, 1997). Maximum size prey for reptiles is calculated using the following equation: BW of assessed species ^1.071 (King, 2002).	2.10	24.74	1285.91			
What is the maximum size <b>amphibian/reptile</b> that can be consumed by the assessed species? NOTE: check the literature for appropriate value to use for the assessed species and enter into Row 16 if available. Default is that amphibians can eat an animal that is 2/3 of its body weight (based on observations of the CRLF, Cook, 1997). Maximum size prey for reptiles is calculated using the following equation: BW of assessed species ^1.071 (King, 2002).	2.10	24.74	1285.91			

#### **Summary of EECs and RQs Based on Upper Bound Kenaga EECs**

Table X. Upper Bound Kenaga, Acute Terrestrial Herpetofauna Dose-Based Risk Quotients

	Adjusted LD50		EECs and RQs											
Size Class (grams)		Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects		Herbivore Mammals		Insectivore Mammal		Amphibians				
		EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ			
2.0	17.07	8.96	0.53	1.00	0.06	676.95	39.66	42.31	2.48	9.31	0.55			
20	20.42	5.31	0.26	0.59	0.03	272.02	13.32	17.00	0.83	6.26	0.31			
800	27.20	2.30	0.08	0.26	0.01	63.13	2.32	3.95	0.15	3.32	0.12			

Table X. Upper Bound Kenaga, Subacute Terrestrial Herpetofauna Dietary Based Risk Quotients

	EECs and RQs											
LC50 (ppm)			Fruits/Pods/ Seeds/ Large Insects		Herbivore Mammals		Insectivore Mammals		Amphibians			
	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ		
1100	161.37	0.15	17.93	0.02	219.90	0.20	13.74	0.01	5.06	0.00		

Size class not used for dietary risk quotients

Table X. Upper Bound Kenaga, Chronic Terrestrial Herpetofauna Dietary Based Risk Quotients												
NOAEC (ppm)		EECs and RQs										
	Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects		Herbivore Mammals		Insectivore Mammals		Amphibians			
	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ		
150	161.37	1.08	17.93	0.12	219.90	1.47	13.74	0.09	5.06	0.03		